

Amendments to the Specification:

On page 2, line 19, through page 3, line 12, please amend this paragraph as follows:

--Another, contactless process which was made known, for example, in the patent applications and patents DE-A-19852320, US 6,191,392 and US 6,~~396~~369,363 tracing back to the applicant, uses a contactless temperature measurement. With this contactless temperature measurement a first pyrometer is provided which is directed to one side of the wafer in order to collect radiation coming from the wafer which contains heat radiation from the wafer as well as radiation from the radiation sources reflected on the wafer. Furthermore, a second pyrometer is provided which is directed towards the radiation sources themselves in order to collect radiation coming from the radiation sources which is provided with a modulation. The modulation of the radiation sources is chosen here such that it does not effect the heat radiation of the wafer, but can be measured in the radiation from the radiation sources reflected on the wafer. Using a specific algorithm, it is possible to separate, to a certain extent, the heat radiation of the wafer measured on the first pyrometer from the radiation of the radiation source reflected on the wafer. The temperature of the wafer can then be determined from the heat radiation.--

On page 18, line 4, through page 19, line 11, please amend this paragraph as follows:

--In accordance with a particularly preferred embodiment of the invention, the measurement value comprises at least one heat radiation coming from the semiconductor wafer which is collected by a radiation detector, preferably a pyrometer. However, the heat radiation can also be established in other ways such as e.g. by means of a thermal element a defined distance away from the wafer and which measures a change in temperature caused by the heat radiation e.g. of a blackened surface. A pyrometer makes possible accurate determination of the radiation intensity and works contact free. The radiation signal collected here by the pyrometer comprises at least one portion of the heat radiation of the

wafer emitted from a measurement area on the semiconductor and radiation from the radiation sources reflected on the wafer and radiation transmitted independently of the wafer material and the wafer temperature through the wafer. Preferably, the radiation of the radiation sources has a modulation which allows a difference from the direct heat radiation of the wafer. With this, it is possible to identify the radiation reflected on the wafer and/or the radiation transmitted through the wafer by means of modulation parameters of the radiation source modulation, as described in greater detail e.g. in patents US 6,191,392 and US 6,396,369,363 tracing back to the applicant, whereby in this process, as already mentioned, a technical measurement recording of the radiation source intensity can be dispensed with. When using modulated radiation sources (heat emitters), the measurement value comprises a changeable portion substantially dependent upon the optical properties of the wafer, which is produced by the modulation of the radiation sources, with which an adjustment of the optical properties (preferably emissivity and/or transmissivity and/or reflectivity) can then be made using an algorithm which adjusts the changeable portion in the measurement value recorded and in the measurement value forecast by the system model by means of adaptation of the optical properties of the wafer (object) in the system model.--